expanded clay, expanded glass, vermiculites, and kieselguhr and their mixtures with 20 to 7 wt% of an aqueous alkali silicate solution where the lightweight aggregate is bonded in a network structure colusively at the contact sites to obtain its essential properties, wherein the molded body has a dry bulk density and that the dry bulk density lies in the range from 150 to 750 kg/m³.

Please cancel claim 2.

3. Molded body according to Claim 1 further comprising that the molded body has a compressive strength and that the compressive strength lies in the range from 0.1 to 15 N/mm².

Please cancel claim 4

- 5. Molded body according to claim 1 wherein the aqueous alkali silicate solution is alkali silicates.
- 6. Process for the production of a molded body according to claim 22 further comprising the steps of:

subjecting the light weight aggravate and the aqueous alkali silicate solution to a shaping process after mixing and sintering at 400°C to 1000°C over a period from 0.1 h to 5 h.

- 7. Process according to Claim 6, wherein the molded body has a compressive strength in the range from 0.1 to 15 N/mm³ and at least one of the dry bulk density and the compressive strength is adjusted as a function of the lightweight aggregate and the process parameters during sintering.
- 8. Process according to Claim 6 further comprising the step of drying at 50°C to 95°C after shaping and before sintering.

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- 9. Process according to claim 6 wherein the sintering process is conducted at 550 to 850 °C.
- 10. Process according to claim 6 wherein sintering occurs during a period from 0.1 h to 0.5 h.
- 11. The molded body according to claim 1, wherein the molded body is used as insulation.
- 12. The molded body according to claim 1, wherein the molded body is used as construction material.
- 13. The molded body according to claim 1, wherein the molded body is used as furnace lining.
- 14. The molded body according to claim 1, wherein the molded body is used as a brick for formation of exhaust installation.
- 15. The molded body according to claim 1, wherein the molded body is used for technical sound protection in interior rooms.
- 16. The molded body according to claim 1, wherein the molded body is used for a sound-absorbing segment for fixed passageways of rail vehicles.
- 17. The molded body according to claim 1, wherein the molded body is used as a fireproofing element.
- 18. The molded body according to claim 1, wherein the molded body is used as a sound absorber in exhaust lines.

22. A process for the production of a molded body from a lightweight substance formed from a lightweight aggregate and a sintering auxiliary, the process comprising the steps of:

obtaining a sintered product by mixing a lightweight substance of 80 to 93 wt% of a lightweight aggregate selected from the group consisting of perlites, expanded clay, expanded glass, vermiculites, and kieselguhr and their mixtures with 20 to 7 wt% of an aqueous alkali silicate solution where the lightweight aggregate is bonded in a network structure exclusively at the contact sites to obtain its essential properties wherein the molded body has a dry bulk density and that the dry bulk density lies in the range from 150 to 750 kg/m³.